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EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
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1791

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/575,017	Applicant(s) BECKER ET AL.	
	Examiner DENNIS CORDRAY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/7/06, 6/2/08, 7/16/09</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites the particle diameter and Markush group for the pigment, but fails to recite whether the pigment is the pigment of the coating (Claim 15) or the pigment of the preparation (Claim 1).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Auhorn et al (US 4908240).

Claims 1-3, 5, 7 and 18: Auhorn et al discloses a method of making a printable paper comprising applying to one or both surfaces of a paper from 0.5 to 4 g/m² of a coating agent consisting of 100 parts by weight finely divided pigment, from 5 to 70 parts by weight, based on solids, of a cationic aqueous dispersion of a paper size and from 0.01 to 10 parts by weight of a surfactant (Abs; col 1, line 65 to col 2, line 12; col 8, lines 58-60). The sizing agent acts like a binder in the mixture (col 2, lines 58-61). The pigments are conventional pigments used in paper coating, such as calcium carbonate, chalk, clay, titanium dioxide, barium sulfate, satin white, talc, silicate, etc. and have a particle size of from 0.2 to 10 mm (col 2, lines 35-43), thus the coating agent can contain pigments comprising metal oxides or semimetal oxides in the claimed size. The claimed coating weights of the components can be calculated from the disclosed composition and amount applied to the paper. A partial coating is not disclosed, thus the entire surface is coated or, at least, coating the entire surface would have been obvious to obtain a uniform paper and uniform printing properties.

Coated papers are disclosed (col 9, lines 20-22, col 12, lines 29-65 and Table).

Claim 4: Auhorn et al discloses that suitable surfactants include cationic, anionic and nonionic species (col 7, line 30-col 8, line 22).

Claim 6: The pigment inherently has an overall anionic, nonionic or cationic charge.

Art Unit: 1791

Claim 8: In some embodiments, up to 90% of the polymer component can be replaced by a polysaccharide (col 2, lines 12-24), which reads on the claimed further additive. Alternatively, the paper size comprises water.

Claims 9-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Auhorn et al in view of Moreland (US 5977018) and as evidenced by Stoye et al ("Paints, Coatings and Solvents", Second, Completely Revised Edition).

The disclosure of Auhorn et al is used as above. Auhorn et al does not disclose that the paper substrate comprises a filler or other additives.

Moreland discloses that conventional fillers used in paper are precipitated or ground calcium carbonate (reads on chalk), talc, clay, titanium dioxide, calcium sulfate (gypsum), silicates, etc. to fill voids in the paper and to enhance the appearance of the printed page (col 3, lines 22-30). Other conventional additives used in paper include binders, dispersants, fluidity improvers, thickening agents, defoamers, dyes and other coloring agents, strengthening agents, etc. (col 3, lines 31-46).

The art of Auhorn et al, Moreland and the instant invention is analogous as pertaining to papers used for printing. It would have been obvious to one of ordinary skill in the art to include the claimed fillers and other additives in the paper substrate of Auhorn et al in view of Moreland as conventional components in printing paper. Many of the disclosed fillers have the claimed oil number (see Stoye et al, pp 154-155, Table 4.2) or, at least, obtaining the claimed value would have been obvious to one of ordinary

Art Unit: 1791

skill in the art from the values in Stoye et al. The fillers have cavity volumes as revealed by the disclosed oil numbers.

Claims 14-17 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Auhorn et al in view of the admitted prior art in the instant Specification.

The disclosure of Auhorn et al is used as above. Auhorn et al does not disclose a further coating.

The instant Specification recites that, in prior art, coated papers comprise at least one coating which usually consists of pigments, binders and additives and that, for improved printability, two or three coats can be applied (p 1, par 2).

It would have been obvious to one of ordinary skill in the art to apply a second coating of the disclosed composition to the paper to further improve printability in view of the admission of the instant Disclosure as a practice well known in the art.

Claims 1, 2 and 4-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ogawa et al (US 5576088) as evidenced by Stoye et al.

Claims 1, 4, 6, 7, 8 and 14-16: Ogawa et al discloses an ink jet recording sheet comprising a support (paper substrate), an ink-receiving layer formed on the support and a gloss-providing layer formed on the ink-receiving layer (Abs; col 3, lines 36-47; col 6, lines 5-6). The ink-receiving layer, which corresponds to the claimed preparation applied to at least one side of the paper, consists essentially of a pigment and a binder.

Art Unit: 1791

Ogawa et al discloses that the pigments include metal oxides and semimetal oxides (col 6, lines 39-51). At least 30 vol-% of the pigment particles in the ink-receiving layer have a particle size of at most 1 μm which overlays the claimed range. Preferably, the pigment is a cationic colloidal particle (col 4, lines 8-13). The amount of binder used is from 3 to 70 parts by weight to 100 parts pigment (col 7, line 66 to col 8, line 2). The ink-receiving layer can also contain a pigment dispersant (reads on surfactant) and other additives (col 8, lines 19-26). The surfactant is inherently anionic, nonionic, cationic or amphoteric. A partial ink-receiving layer is not disclosed, thus the layer coats the entire surface or, at least, coating the entire surface would have been obvious to obtain a uniform paper and uniform printing properties.

The gloss-providing layer consists essentially of a pigment and a binder, at least 70 parts by weight per 100 parts pigment have an average particle size of at most 300 nm (col 3, lines 43-47; col 4, lines 20-57). The pigments include metal oxides and semimetal oxides (col 8, lines 40-46).

Claims 2 and 5: The ink-receiving layer is coated in an amount of at least 1 g/m^2 , which overlays the claimed amount (col 8, lines 27-28). Ogawa et al teaches that conventional white pigments include calcium carbonate (reads on chalk), talc, calcium sulfate, titanium dioxide, silicates, diatomaceous earth, silica, alumina, aluminum hydroxide, etc. (col 6, lines 39-51). The amount of pigment can be calculated to be within the claimed range by considering that the ink-receiving layer consists essentially of pigment and binder and using the disclosed ratio of binder to pigment or, at least,

Art Unit: 1791

amounts in the claimed range would have been obvious to one of ordinary skill in the art.

Claims 9-13: Ogawa et al discloses that the paper support comprises a conventional pigment and at least one additive (col 6, lines 5-13). Although not explicitly disclosed as paper fillers, the conventional white pigments as disclosed above are included in the broader recitation of conventional pigments or, at least, such pigments would have been obvious to one of ordinary skill in the art as fillers used in paper. Many of the disclosed pigments have the claimed oil number (see Stoye et al, pp 154-155, Table 4.2) or, at least, obtaining the claimed value would have been obvious to one of ordinary skill in the art from the values in Stoye et al. The fillers have cavity volumes as revealed by the disclosed oil numbers.

Claim 17: The gloss-providing layer can also contain an amphotite as an essential component (col 12, lines 54-56).

Claims 18 and 19: Ogawa et al discloses a process for making the paper comprising forming on a substrate at least one ink-receiving layer consisting essentially of a pigment and a binder, then coating on the ink-receiving layer a composition consisting essentially of a pigment and a binder (col 4, lines 23-53).

Claims 1-8 and 14-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Darsillo et al (US 2002/0004131) as evidenced by Stoye et al.

Claims 1, 6, 7 and 8: Darsillo et al discloses a recording medium comprising a paper substrate having a glossy coating thereon. The glossy coating comprises a binder and first and second groups of particles. The first group comprises metal oxide particles having a size less than 100 nm in diameter and aggregates of the particles having a diameter from about 100 nm to about 500 nm. The second group comprises metal oxide or semimetal oxide particles having a mean diameter less than about 50% of the aggregates (Abs; p 1, pars 8-13; p 2, par 27; p 5, pars 58-59). The particles in each group have an overall cationic, nonionic or anionic charge (p 3, par 44). The glossy coating can comprise a surfactant and other additives (p 6, par 63). A partial coating is not disclosed, thus the entire surface is coated or, at least, coating the entire surface would have been obvious to obtain a uniform paper and uniform printing properties.

Claims 2 and 5: In examples, a coating weight of 15 g/m² was applied (p 11, Examples 10-13). The amount of binder is from about 1% to about 50% of the composition (dry binder and particles combined), thus a weight of pigment particles within the claimed range can be calculated (p 7, par 78).

Claim 3: In some examples, the amount of surfactant used is 1% of the amount of pigment, thus a weight of surfactant within the claimed range can be calculated (p 11, Table 8; p 12, Table 12).

Claim 4: Cationic, anionic and nonionic surfactants are disclosed (p 6, par 63).

Art Unit: 1791

Claims 14-17: Darsillo et al discloses that the substrate can have more than one coating layer, which can be the same (p 2, par 38), thus, a second layer having the claimed composition and coated onto the first is embodied.

Claims 18 and 19: Darsillo et al discloses a method of making the recording medium comprising coating the substrate to provide a coated substrate (p 1, par 15).

Claims 9-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Darsillo et al in view of Moreland and as evidenced by Stoye et al.

The disclosure of Darsillo et al is used as above. Darsillo et al does not disclose that the paper substrate comprises a filler or other additives.

Moreland discloses that conventional fillers used in paper are precipitated or ground calcium carbonate (reads on chalk), talc, clay, titanium dioxide, calcium sulfate (gypsum), silicates, etc. to fill voids in the paper and to enhance the appearance of the printed page (col 3, lines 22-30). Other conventional additives used in paper include binders, dispersants, fluidity improvers, thickening agents, defoamers, dyes and other coloring agents, strengthening agents, etc. (col 3, lines 32-46).

The art of Darsillo et al, Moreland and the instant invention is analogous as pertaining to papers used for printing. It would have been obvious to one of ordinary skill in the art to include the claimed fillers and other additives in the paper substrate of Darsillo et al in view of Moreland as conventional components in printing paper. Many of the disclosed fillers have the claimed oil number (see Stoye et al, pp 154-155, Table 4.2) or, at least, obtaining the claimed value would have been obvious to one of ordinary

Art Unit: 1791

skill in the art from the values in Stoye et al. The fillers have cavity volumes as revealed by the disclosed oil numbers.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Liu et al (US 5958168), Hirose et al (US 6203899), Becker (US 2002/0071019) and Zhao et al (US 2003/0022970) disclose other printing media comprising coatings containing pigments and binders.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/
Examiner, Art Unit 1791

/Eric Hug/
Primary Examiner, Art Unit 1791